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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,752	09/21/2001	Gregory J. Gerhard	MVIS 97-14 C2	6486

7590 07/28/2004

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EXAMINER

NGUYEN, KEVIN M

ART UNIT PAPER NUMBER

2674

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/960,752

**Applicant(s)**

GERHARD ET AL.

**Examiner**

Kevin M. Nguyen

**Art Unit**

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 48-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/21/2001.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Double Patenting*

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 48-61 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 48-61 of copending Application No. 10/041163. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 48, 49, 51, 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Melville et al (US 6,204,832).

As to claim 48, Melville et al teaches a display system 10 (fig. 1) associated with a method, the display system comprising

[recited in line 4 of claim 48]

Light emitters 14 (fig. 1).

[recited in lines 5-6 of claim 48]

The scanning frequency for scanning along the first axis equals the natural resonant frequency of the moving components of driver 60 (fig. 9, col. 9, lines 3-5).

[recited in lines 7-8 of claim 48]

Fig. 6b shows the relative position of the micro lens array 18 relative to the light emitter array 12 a short time later when a adjacent pixel is being imaged in each image portion (col. 7, lines 29-32).

[recited in lines 9-10 of claim 48]

The light beam 50 are scanned back and forth along the first scanning axis x and back and forth along the second scanning axis y to scan multiple lines of pixels 66 within corresponding image portion 64 (col. 8, lines 62-65).

Thus, data are weighted between back and forth as a function of the first rate of scanning of axis x as claimed. Driver 60 (fig. 1) drives/modulates the beam of light 50 (fig. 1) as claimed.

As to claim 49, Melville et al teaches FIG. 6b shows the relative position of the micro lens array 18 relative to the light emitter array 12 a short time later when an adjacent pixel is being imaged in each image portion. Note that the micro lens array has moved along a first axis x by an increment Dx to position the output beams 50 at the adjacent pixel area within each image portion 64. FIG. 6c shows the relative position of the micro lens array 18 relative to the light emitter array 12 at a later time in the image portion scan cycle when another row of pixels is to be imaged. Note that the micro lens array has moved along a second axis y by an increment Dy to position the output beams 50 at the adjacent row within each image portion 64 (col. 7, lines 28-41).

As to claim 51, Melville et al teaches the first scanning axis x is orthogonal to the second scanning axis y (col. 8, lines 59-60).

As to claim 52, Melville et al teaches inherently a clocking signal, image portion buffers 44 (fig. 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 50, 53, 54, 56, 58, 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melville et al in view of Terakawa et al (US 5,926,164).

As to claim 50, Melville et al teaches all of the claimed limitations, except for calculating a weighted average of the image data corresponding to the first and second desired pixel locations.

Terakawa et al teaches the adder 242 and bit shifter 243 calculates a simple average of the 9 picture data (fig. 6a, col. 3, lines 16-17).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Melville's processor including a calculation of the simple average of the 9 picture data, in view of the teaching in the Terakawa's reference because this would provide a clear and distinguishable view of the image as taught by Terakawa et al (col. 1, lines 37-38).

6. As to claim 53, Melville et al teaches a display system 10 (fig. 1) associated with a method, the display system comprising

[recited in line 4 of claim 53]

image portion buffers 44 (fig. 1).

[recited in line 5 of claim 53]

Light emitters 14 (fig. 1).

[recited in lines 6-7 of claim 53]

The scanning frequency for scanning along the first axis equals the natural resonant frequency of the moving components of driver 60 (fig. 9, col. 9, lines 3-5).

[recited in lines 8-9 of claim 53]

Fig. 6b shows the relative position of the micro lens array 18 relative to the light emitter array 12 a short time later when a adjacent pixel is being imaged in each image portion (col. 7, lines 29-32).

[recited in lines 10-13 of claim 53]

The light beam 50 are scanned back and forth along the first scanning axis x and back and forth along the second scanning axis y to scan multiple lines of pixels 66 within corresponding image portion 64 (col. 8, lines 62-65).

Thus, data are weighted between back and forth as a function of the first rate of scanning of axis x as claimed. Driver 60 (fig. 1) drives/modulates the beam of light 50 (fig. 1) as claimed.

Melville et al fails to teach weighting average of a plurality of the data.

Terakawa et al teaches the adder 242 and bit shifter 243 calculates a simple average of the 9 picture data (fig. 6a, col. 3, lines 16-17).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Melville's processor including a calculation of the simple average of the 9 picture data, in view of the teaching in the Terakawa's reference because this would provide a clear and distinguishable view of the image as taught by Terakawa et al (col. 1, lines 37-38).

As to claim 54, Melville et al teaches image portion buffers 44 (fig. 1).

As to claim 56, Melville et al teaches light emitting diodes (col. 4, line 47).

7. As to claim 58, Melville et al teaches a display system 10 (fig. 1) associated with a method, the display system comprising

[recited in line 3 of claim 58]

image portion buffers 44 (fig. 1).

[recited in lines 6-7 of claim 58]

The scanning frequency for scanning along the first axis equals the natural resonant frequency of the moving components of driver 60 (fig. 9, col. 9, lines 3-5).

Melville et al fails to teach [recited in lines 4-5, and lines 8-11 of claim 58]

Terakawa et al teaches when dot clock appears in step 201, a sum of the 8 element of picture data is calculated in step 202. In step 203, the sum is shifted to the right by 3 bits. Then the averaged data  $f(x,y)$  is output in a certain timing synchronized with the dot clock (fig. 6a, col. 3, lines 21-25).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Melville's processor including the function of dot clock appears in step 201, a sum of the 8 element of picture data is calculated in step 202. In step 203, the sum is shifted to the right by 3 bits. Then the averaged data  $f(x,y)$  is output in a certain timing synchronized with the dot clock, in view of the teaching in the Terakawa's reference because this would provide a clear and distinguishable view of the image as taught by Terakawa et al (col. 1, lines 37-38).

As to claim 59, Melville et al teaches at col. 5, lines 41-56 meet the claimed limitation. For, example, sweeping the beam of light 50 through the moving micro lens



array 16 (fig. 6B). The micro lens 16 are controlled by the axis 1 position driver 60 (the resonant scanning pattern, fig. 1,).

8. Claims 55, 57, 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melville et al and Terakawa et al, and further in view of Dubner (US 4,849,746).

As to claim 55, 61, Melville et al and Terakawa et al teach all of the claimed limitations, except for gamma correcting the corresponding weighted average.

Dubner teaches the output of the mixer 64 is a weighted average of the corresponding pixels one consecutive lines with the appropriate gamma correction (col. 4, lines 56-58).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Melville's processor including the weighted average of the corresponding pixels one consecutive lines with the appropriate gamma correction, in view of the teaching in the Dubner's reference because this would provide good smooth scrolling a video image across a video display device as taught by Dubner (col. 2, lines 4-5).

As to claim 57, Dubner teaches weighted average of mixer 64 including a current E (see fig. 3b).

9. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Melville et al and Terakawa et al, and further in view of Kollin et al (US 6,157,352).

As to claim 60, Melville et al and Terakawa et al teach all of the claimed limitations, except for the resonant scanning pattern including redirecting the beam of light with at least one resonantly driven mirror.

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Kollin et al teaches the scanner 200 including a mirror 212 driven by a magnetic circuit so as to oscillate at a high frequency about an axis of rotation 214 (fig. 4, col. 7, lines 44-46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Melville's scanner including a mirror, in view of the teaching in the Kollin's reference because this would provide redirecting the beam of light.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen  
Patent Examiner  
Art Unit 2674

KN  
July 23, 2004

  
**XIAO WU**  
**PRIMARY EXAMINER**